ABSTRACT

A method is provided for exploring alternative architectures for partitioning computer system resources to execute multiple task specifications. An initial master task graph is formed from the multiple task specifications, the initial master task graph including at least one hierarchical task with pointers to either AND sub-task graphs or XOR sub-task graphs. The initial master task graph is processed to provide a selected number of final master task graphs, each of the final master task graphs comprising a list of AND task graphs. A family of architectures is generated for each of the final master task graphs, each of the architectures generated for a given master task graph being capable of executing every AND task graph included therein. . The degree of resemblance in composition, functional capability or performance resulting between architectures from different master task graphs is a function of the correlation between the contents of these master task graphs and not of concern to the user of the aforementioned method.